REGIONAL TRENDS OF MALARIA CASES IN ADAMAWA STATE

Kumur John Haganawiga 1Elishama Lakam John 2Joshua Dzankar Zoaka 3A.G. John 4Adamu B.M 5

1Department of Statistics, Adamawa State Polytechnic, Yola, Adamawa State, Nigeria  
kumurjohn@gmail.com  
2Department of Mathematics, Adamawa State Polytechnic, Yola, Adamawa State, Nigeria  
3Department of Economics, Adamawa State Polytechnic, Yola, Adamawa State, Nigeria  
Jozoks69@gmail.com  
4Department of Disaster and Risk Management, Adamawa State Polytechnic, Yola, Adamawa State,  
Gdwin54@gmail.com  
5Department of Science Laboratory Technology, Adamawa State Polytechnic, Yola, Adamawa State,  
Nigeria

ABSTRACT

Malaria has been a long life-threatening parasitic disease transmitted by female anopheles mosquitoes. Malaria continues to be an economic burden and a great threat globally and almost impossible to eradicate for the past six decades. It is one of the leading causes of illness and death in the tropical part of the world. This study look at the regional trends of malaria cases in Adamawa State. The data were extracted from reported cases of malaria in some selected (12) local government areas of the State between 2008 and 2012. The total number of cases reported was 584980 in the local government areas under study. The study revealed that there was a fluctuating trend occurrence of malaria cases observed in the study areas. Yola North region recorded the highest reported malaria with 202,834 cases, followed by Jada region, Ganye region, Mubi South region, Numan region, Maiha region, Mubi North region, Gombi region, Girei region, Song region, Guyuk region and Toungo region reported the lowest with 3,345 cases. Also, the peak malaria case was observed during 2008 in Yola-North region, while minimum malaria case was observed in Toungo region The study therefore recommends that, there should be malaria control programs which will have a significant impact on the overall control of malaria in the regions and sanitation on malaria cases in some of the selected local government area in the State.

Key Words: Trend, Malaria, Prevalence, Region.
1. Introduction

Malaria has been a long life-threatening parasitic disease transmitted by female anopheles mosquitoes. It is one of the leading causes of illnesses and death in the world. It is the leading cause of death in children under the age of 5 years and pregnant women in developing countries (Martens and Hall, 2000). In 2010, there was an estimated 216 million cases of malaria worldwide, of which 91% were due to *Plasmodium falciparum*. The vast majority of cases (81%) were in the African Region followed by South-East Asia and, Eastern Mediterranean Regions by World Health Organization (WHO), (WHO, 2011). The disease remains one of the most important causes of human morbidity and mortality with enormous medical, economic and emotional impact in the world.

Malaria has gained much recognition in Africa in recent years with the World Health Organization main target of eradication and therefore developing roadmaps in 2012 for prevention, control, and elimination (WHO, 2013). Report by WHO indicates that malaria among the infectious diseases is attributed to about nine million deaths annually and it is one of the infectious diseases of poverty believed to be prevalent among poorer communities (WHO, 2012). This shows that the association between poverty with lack of basic amenities and malaria is often interlinked. According to WHO, there are an estimated 35 million disability-adjusted life years (DALYs) attributed to malaria each year, (Laxminarayan and Ashford, 2008).

Due to the high level of malaria transmission in Nigeria, every pregnant woman is at risk of malaria infection, the effect of which can cause little or no damage to severe life threatening damages like spontaneous abortion, stillbirths, premature delivery, low birth weight (LBW), neonatal death and maternal death (FMOH, 2002). The North Eastern region of Nigeria has one of the highest maternal mortality ratios (MMR) in the world, and most of these deaths are Preventable (Bukar et al., 2013)

Malaria remains a major environmental factor focusing on serious pregnancy complications, whose incidence and severity depend on gestational age, parity and the level of malaria endemicity. It is estimated that 10,000 women and 200,000 infants die as a result of malaria infection during pregnancy. Severe maternal anaemia, premature and low birth weight contributes to more than half of those deaths (Egwang, 2006). Malaria circulates within a complex social-ecological-epidemiological system, and multiple dynamic processes influence transmission risk, requiring careful examination of a diverse set of factors, such as LULC dynamics, mosquito life history and diversity, malaria epidemiology and human behaviour. For example, deforestation Tadel et al,(1998) and Vittor et al, (2006), proliferation of forest edges Overgaard et al, (2003), streams, rivers and standing water along forest margins Barros and Honorio,(2015) artificial reservoirs, such as watering holes and aquaculture ponds Maheu et al , (2010) and Monnerat et al, (2014) and forest-related activities such as hunting,
extraction of forest products (e.g. timber, fruits, medicinal plants), and shifting agriculture
Valle et al, (2011), have all been blamed for increasing malaria transmission in the Amazon
region. Deforestation, in particular, is a common theme in the literature examining the impact
of environmental factors on malaria in the Amazon. Still, while some studies conclude that
deforestation can reduce malaria transmission de Castro et al, (2006) and Moutinho et al,
(2011), Malaria has generated a lot of health challenges nationwide. Despite efforts by
individuals, government and non-governmental organizations (NGO) in curbing this menace,
it still poses a lot of threat to the society. Hence this study seeks to look at the regional trends
of malaria cases in some selected local government area in Adamawa State from 2008-2012.

2. Methodology
Study Area
The area of study is Adamawa State located in the North Eastern part to Nigeria, which was
carved out of the former Gongola State on the 17th August 1991, with headquarters in Yola. It
is bordered by Borno and Yobe State in the North, Gombe State in the West, Taraba State in
the South and the Republic of Cameroun from the East (along Nigerian international border).
It lies between latitude 8° N and 11° and longitude 11.5° and 13.5°E. It covers a land mass of
39,742.12 square Kilometres that is about 4.4% of the land area of Nigeria. It has a
population of 3,168,101 based on the 2006 census. The state has 21 local Government areas

Study Population and source of Data
The study population covers 584,980 people that included malaria cases in some selected
Local Government Areas in Adamawa State. The study was based on secondary data which
was extracted from Adamawa State Statistical Year Book 2012 for the period of 5 years from
2008-2012.
3. Discussion of Findings

Table 1. shows the number of malaria cases in some Selected Local Government Areas in the State

<table>
<thead>
<tr>
<th>LGA</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>Total</th>
</tr>
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<tbody>
<tr>
<td>Ganye</td>
<td>1037</td>
<td>5268</td>
<td>1698</td>
<td>28259</td>
<td>5267</td>
<td>41529</td>
</tr>
<tr>
<td>Girei</td>
<td>4764</td>
<td>6220</td>
<td>6125</td>
<td>2849</td>
<td>6310</td>
<td>26268</td>
</tr>
<tr>
<td>Gombi</td>
<td>8787</td>
<td>795</td>
<td>10736</td>
<td>8323</td>
<td>8401</td>
<td>37042</td>
</tr>
<tr>
<td>Guyuk</td>
<td>4133</td>
<td>4418</td>
<td>3990</td>
<td>1782</td>
<td>4227</td>
<td>18550</td>
</tr>
<tr>
<td>Jada</td>
<td>3057</td>
<td>42118</td>
<td>14761</td>
<td>850</td>
<td>3057</td>
<td>63843</td>
</tr>
<tr>
<td>Maiha</td>
<td>13080</td>
<td>780</td>
<td>1297</td>
<td>450</td>
<td>9174</td>
<td>24781</td>
</tr>
<tr>
<td>Mubi North</td>
<td>5948</td>
<td>12785</td>
<td>6268</td>
<td>5471</td>
<td>10125</td>
<td>40597</td>
</tr>
<tr>
<td>Mubi South</td>
<td>1839</td>
<td>8457</td>
<td>22260</td>
<td>12926</td>
<td>9711</td>
<td>55193</td>
</tr>
<tr>
<td>Numan</td>
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<td>12214</td>
<td>16928</td>
<td>6949</td>
<td>10081</td>
<td>56253</td>
</tr>
<tr>
<td>Song</td>
<td>4004</td>
<td>3984</td>
<td>381</td>
<td>2372</td>
<td>4004</td>
<td>14745</td>
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<tr>
<td>Toungo</td>
<td>618</td>
<td>705</td>
<td>499</td>
<td>818</td>
<td>705</td>
<td>3345</td>
</tr>
<tr>
<td>Yola North</td>
<td>90580</td>
<td>4081</td>
<td>51529</td>
<td>15827</td>
<td>40817</td>
<td>202834</td>
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<tr>
<td>Total</td>
<td>147928</td>
<td>101825</td>
<td>136472</td>
<td>86876</td>
<td>111879</td>
<td>584980</td>
</tr>
</tbody>
</table>

Sources: Adamawa State Statistical Year Book 2012

Fig 1. Regional Trends of Malaria cases in Some Selected Local Government Area in the State between 2008-2012.

Figure 1 depicts the irregular pattern of malaria cases recorded under the study period (2008 - 2012). This study revealed that there was an unsteady trend of malaria cases within the period. Total malaria reported cases had generally decreased between the five years, 2008-2012. Yola North region recorded the highest reported malaria cases, followed by the Jada region, Ganye region, Mubi South region, Numan region, Maiha region, Mubi North region, Gombi region, Girei region, Song region, Guyuk region and Toungo region reporting the lowest malaria cases under the study period. These irregular patterns of malaria cases could
be attributed to unhygienic nature of most local government that are in the urban centres where dump sites are not regularly evacuated and poor drainage system that provide breeding spaces for mosquitos in the study area with higher prevalence as describe by Nkuo-Akenji et al, (2006) that Inhabitants of houses surrounded by bushes or garbage heaps and swamps or stagnant water showed higher malaria parasite prevalence and densities compared with those from cleaner surroundings while places like Toungo which has dense forest being close to Gashaka Gumti National Park that recorded lowest prevalence may be connected to the fact that areas with dense forest do not support breeding of mosquito because of the low temperature of such ecosystem as described by Joanna et al, (2017) that deforestation increases malaria risk.

4. Conclusion and Recommendation
The results of this study depict that during the last five years, an unstable trend incidence of malaria cases was observed in the study area. A decrease in the number of malaria cases occurred from 2008–2012 with a minimum number of malaria cases reported in 2011. However, the peak malaria case was observed during 2008. As malaria’s incidence increases, so too will morbidity and mortality rates, the study therefore recommends that, there should be malaria control programs which will have a significant impact on the overall control of malaria in the regions and sanitation on malaria cases some of these selected local government area in the State.

References


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